

sonality and reproductive success at the Miami International Airport and private residences in Dade and Broward counties, Florida. Reproductive data for each of the three years (1988–90) reveal a higher reproductive success rate (54%) for 1990 than 1989 (40%) and 1988 (40%). Owls using previously used burrows had a higher success in fledging young (63%) than newly excavated burrows (19%). T-tests were conducted on several appendage measurements of male and female owls to determine sexual dimorphic traits. Metatarsus lengths of males and females were different ( $t = 2.36$ ,  $P = 0.02$ ). As of 1990, 197 owls had been banded in the study areas. In 1989, 75% and in 1990, 83% of the banded adults were found on the same territory. Only four of 129 banded nestlings have been reencountered in the study sites. The owls' nesting sites are primarily located in residential areas. Management will involve educating home owners concerning landscaping techniques and their effects on the Burrowing Owl population.

MATE AND TERRITORY FIDELITY AND NATAL DISPERSAL IN AN URBAN POPULATION OF FLORIDA BURROWING OWLS (*ATHENE CUNICULARIA FLORIDANA*)

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From 1986 to the present we studied an urban population of Florida Burrowing Owls on a 32 km<sup>2</sup> study area in Cape Coral, Lee County, Florida. This paper uses data collected from 1987 to 1989. During this period, the number of breeding pairs varied from 129 to 190; a total of 617 nesting attempts was monitored. In 1987 and 1988, 476 owls, about 25% of breeding adults and 20% of nestlings, were banded. All banded breeding adults were identified in subsequent years, and 207 individuals were reencountered during the study period. Reencounter rates between years averaged 68% for adult males, 58% for adult females, and 20% for one-year-old owls. Reencountered adults typically remained on the same territory between years (87% of males and 69% of females). Nearly all pairs (95%), where both adults survived between years, remained paired. Natal dispersal distances averaged 81.4 m for males and 531 m for females. Data from additional years will be included in the oral presentation.

DIURNAL AND CREPUSCULAR/NOCTURNAL FORAGING AND BEHAVIORAL DIFFERENCES OF THE WESTERN BURROWING OWL

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During the nesting seasons of 1990 and 1991, diurnal time budgets of Burrowing Owls (*Speotyto cunicularia hypugaea*) in Colorado were studied. In 1992 a night-vision scope was used to collect comparable observational data during darkness. Due to the change in foraging responsibility of having young to feed, diurnal and crepuscular/nocturnal behaviors were split into prehatch and posthatch seasons and compared separately. We used foraging theory predictions to also investigate foraging behavior between these two periods. Preliminary investigation of prehatch behaviors indicated comfort movements (i.e., preening, stretching, etc.) ( $P = 0.005$ ), resting ( $P = 0.009$ ), and alert ( $P = 0.006$ ) were greater diurnally, while out-of-sight ( $P = 0.002$ ) and feeding ( $P = 0.004$ ) were more frequent during crepuscular/nocturnal hours. During the posthatch period, burrowing owls locomoted more nocturnally ( $P = 0.0002$ ) and performed comfort movements more frequently diurnally ( $P = 0.004$ ). Additionally, when the sexes were analyzed separately, females rested ( $P = 0.013$ ) more during daylight in the posthatch period. Several predictions of foraging behavior were based on central place foraging theory: foraging bouts when an individual returned with a mammal should be longer than those when it returned with an insect, males should have longer foraging bouts than females, and males should capture proportionately more mammals than insects than females capture. As predicted, foraging bouts when an owl returned with a small mammal (mean = 327 seconds) were longer ( $P = 0.0001$ ) than those resulting in an insect capture (mean = 205 seconds). Male foraging bouts (mean = 257 seconds) are also longer ( $P = 0.0001$ ) than female (mean = 193 seconds). Furthermore, males take more small mammals (15%) proportionally than females (2%) take ( $P < 0.05$ ). The information presented here has several management implications. First, males capture more small mammals than females, and both sexes capture a relatively large number of insects. Consequently, both insect and small mammal prey bases are important factors in Burrowing Owl nesting activity. Secondly, the foraging theory predictions examined held true. These predictions can now be taken into consideration when examining prey populations in relation to their location and distance from the Burrowing Owl nesting burrow.

BURROWING OWLS IN MAPIMI, MEXICO

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Burrowing Owls (*Athene cunicularia*) are threatened throughout much of their North American distribution. This owl has declined due mainly to habitat destruction